AGC/WSDOT Structures Team Minutes
26 January 2007

Members

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[1] WSDOT

Guests

Attendee:	Company	Phone	E-mail
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Tams, Chris	SWR[1]	360-759-1325	tamsc@wsdot.wa.gov

The meeting started at 09:00.

1. Constructibility Review of US 97 Biggs Rapids Bridge Deck Replacement

Personnel from WSDOT Southwest Region and HQ Bridge Design provided a handout to team members and described the deck replacement project. Chris Tams, WSDOT Project Engineer, asked the team if the work could be completed with 160 working days of full deck closure at any time between Labor Day (3 September 2007) and Memorial Day (26 May 2008). He also requested feedback on preference between weather shutdowns versus cold weather concrete work. The project is located approximately 20 miles east of

The Dalles on US 97 between Klickitat County, Washington and Sherman County, Oregon.

Project and bridge details include:

- Engineer's estimate is $13 – 15 million
- Bridge is currently under load restrictions due to deck deterioration; full deck replacement is required
- Construction will include full bridge closure
- Commitment to affected communities is maximum 160 days of full bridge closure between Labor Day 2007 and Memorial Day 2008
- Typical past conditions include average temperature of 30 deg F and 2-3 days per month with wind gusts > 30 mph at that time of year
- Deck width is 30'-4"; north approach has five spans of 189 ft each; midspan truss is 340 ft span; south approach has six spans of 189 ft each and one span of 139 ft; total is ½ mile length
- Existing deck is CIP concrete on steel plate girders with shear connectors that will be reused for new deck
- New deck is 7-1/2" thick for a total of 1900 CY concrete; handout provided sequence for new deck placement
- Other tasks are replacing 4 steel pins at one hinge, bridge rail, and illumination
- Center span has marine traffic; this may limit barge placement during work

Team discussion included the following points:

- Consider exodermic bridge deck; team conversation indicated that this was likely not feasible
- Change design to precast deck with longitudinal post-tensioning
- Evaluate existing girders for vibration and consider stiffening prior to deck placement; this deck is known to have high vibration and is subjected to 20% heavy truck traffic
- Team members asked about provisions for lead paint removal

The team concluded the following:

- Working days are adequate
- Recommend deck be redesigned as precast post-tension to reduce weather impact and associated construction problems

Action Item: No further action by team.

2. Approval of December Meeting Minutes

Correction was requested for one of the team recommendations for the I-5 deck overlay project as follows "Require Contractors to have minimum amount of **extra** materials **available** ~~on hand~~ to preclude material shortages in the event of overrun due to potential further deck preparation Construction Cost Indices."

No other exceptions were taken with the meeting minutes.

Action Item: No further action by team.

3. Update on Local Fly Ash Production

Mohammad Sheikhizadeh informed the team of the following:

- WSDOT is working with the Washington Aggregates and Concrete Association (WACA) to evaluate and track fly ash sources
- At this time, there is no good assessment of Class C fly ash effects
- WSDOT is open to and will evaluate requests to use alternative cementitious materials; determining factors are performance related
- Slag is often available from Lafarge; Class F fly ash is shipped from Canada

Team members question the use of Class C fly ash for modified concrete overlays.

Action Item: Mo will keep team informed of updates to fly ash supply and use. No further action by team.

4. Further Deck Preparation Std Spec 6-09.3(6) Updates

This topic was introduced to determine if the extent of further deck preparation can be improved. WSDOT is concerned that decks may not require extensive removal as is occurring in some cases. Cases addressed in this discussion include (1) when contractor and inspector agree that concrete is bad and decide to leave it in place and (2) when contractor and inspector disagree as to whether or not existing concrete is bad.

Mo provided a handout with revisions to 6-09.3 including:

- Add requirement to submit paving machine submittal
- Add requirement for Engineer's approval of areas marked for further deck preparation and extent of removal

Team discussion included the following points:

- Mo suggested the PE to provide final approval for the extent of further deck preparation for overlay
- Team expressed concern with inexperienced inspectors
- Project schedules should be improved to include effort of further deck prep
- Need volumetric estimate for further deck preparation
- Eastern Region does volumetric measurement for further deck prep, others use force account
- If less experienced contractors do overlays, determination of further deck prep by inspectors may be beneficial to WSDOT

As owner of CBI, Mark Rohde stated the following:

- Std Spec 6-09.3(14) places responsibility for overlay bond and repair on contractors

- Std Spec 1-05.2 limits inspectors authority over contractors
- Suggested that Std Spec 6-09.3(6) "as authorized by Engineer" be revised if inspectors determine extent of further deck prep
- Strongly recommended contractor continue deciding extent of further deck prep and accepting responsibility for overlay bond
- Concerned about lower quality overlay if contractor is not responsible for bond
- Estimated polyester overlay at approx $2000/CY

Action Item: HQ Construction will evaluate team feedback prior to Std Spec changes.

5. I-5 Seattle Viaduct Deck Overlay and Expansion Joint Rehabilitation

Based on valuable feedback from this team at two prior meetings and continuing design development, details of this project have been modified and are again presented for constructability comments. Anthony Mizumori, HQ Bridge, provided a handout with structure details and proposed staging. Prior meeting minutes can be referenced for structure details.

New information and team discussion included:

- Project will be advertised 26 March 2007
- Steel brackets for expansion joints will be painted
- Team expressed concern with plan to bond polyester headers to steel plates; recommend using polyester resin adhesive layer
- Team recommends steel brackets at expansion joints have weld section lowered as far as possible to ease access from underside and weld should be minimized
- Minimize metal-to-metal contact in joint; consider coping gusset to allow contact only at lower weld location

Action Item: No further action by team.

6. Reasonable Abutment or Retaining Wall Footing Maximum Slope

Mo asked the team if the 4:1 slope for retaining wall footings is reasonable and provided photo of recent project where this slope was problematic. Bridge design manual has max slope of 4:1 for retaining walls and 6:1 for bridge piers. Discussion indicated that team members did not find 4:1 to be difficult and considered it reasonable as a max slope.

Action Item: No further action by team.

7. WSDOT meeting with Burlington Northern Railroad (BNR)

Jesse Beaver discussed a meeting between WSDOT and BNR to discuss practices for bridge demolition over tracks. This discussion was motivated by recent change of management at BNR and consequent increased requirements for non-destructive demolition techniques. WSDOT and BNR agreed that the most stringent demolition methods may not always be required. Jesse handed out a BNR publication on demolition work around tracks and described ongoing work with BNR to standardize procedures for

determining the level of track protection required for each demolition project. Team recommended WSDOT also discuss work adjacent to tracks with BNR.

Action Item: WSDOT will inform the team of any further discussion with BNR.

8. Feedback on Updates to Std Spec 2-03.2 Temporary Excavations & 2-09.3(3)B Excavation Using Open Pits – Extra Excavation

Mo provided a handout with revised standard specification. Revision included addition of new Section 2-03.2 and modification of open pit excavation in Section 2-09.3(3)B.

Team discussion included the following points:

- Team asked if intent was to include drains
- Clarification was sought on the term "structural elements" which are protected by these procedures
- Does WSDOT really want to require capacity for an extra 2 ft of over excavation in all shoring systems; this may be very expensive in some cases
- Geotechnical report is frequently inadequate to design shoring and make estimates for bids
- Consider allowing 2:1 slope for open excavation as a standard option, unless specific soil types are encountered
- Recommend this be a general special provision (GSP)
- Team is opposed to the changes

Action Item: Mo will look into team's questions, re-evaluate proposed changes prior to standard specification modifications, and report action to team.

The meeting was adjourned at 12:00.

The next meetings are scheduled for **2 Mar 07**, **6 Apr 07**, and **18 May 07**